



All-weather Navigation Plan Is Called Vital to Defense

An all-weather air navigation system could turn airline deficits into profits and strengthen the weakest link in our national defense, D. W. Rentzel, Administrator of Civil Aeronautics, told the United States Senate Committee on Interstate and Foreign Commerce in a statement last month.

He presented an appraisal of the needs and benefits of the air navigation program developed by Special Committee 31 of the Radio Technical Commission for Aeronautics.

"Our national existence might conceivably hinge on the critical opening days of another war," he told the committee. "Should a sneak attack be made on the United States, it would be hurled back, if at all, with weapons and facilities in existence and in general use. There could be no waiting for good weather; no delay to install new devices and train men in their use."

"It would be impossible under adverse instrument weather conditions, with our present airway system, to move large numbers of attack bombers and fighters rapidly and simultaneously to a threatened point in the continental United States. Equally important, it would be impossible to supply these shock forces by air in sufficient volume."

Potential Revenue Indicated.—A study being made by the CAA indicates that with improved regularity and safety, plus a leveling off of the seasonal swing, the scheduled airlines might reasonably expect annual net taxable income of \$30,300,000 instead of current deficits, the Administrator said.

Reliability may be an even more important factor in the growth of air cargo than in the development of air passenger traffic, he added. "A high degree of reliability is necessary to assure next-morning deliveries that minimize wholesale and retail inventories and warehousing; to preserve agricultural products; to time advertising and deliveries; and to catch and even-off price fluctuations at important points."

A recent review of various studies and forecasts, he said, resulted in an estimate that at present rates the annual domestic air cargo potential is 500,000,000 ton miles, or more than three times the amount actually being carried by air today.

The Administrator told the Committee that the Post Office Department believes that if reliability of air mail delivery could be improved, much additional air mail would be generated, reducing costs.

Feeder Lines Would Benefit.—An all-weather air navigation system would have an important effect on the feeder lines, he said. The potential volume of

short-haul passenger business is huge, he declared, but existing feeder lines have thus far been able to develop an annual passenger rate of only about 100 million. "The chief reason seems to be that the short-distance travelers are even more influenced than long-distance travelers by the need of schedule reliability," he continued. "To a man making a trip of 200 miles, for example, a 2- or 3-hour delay makes the advantages of air travel seem negligible. Yet today over half of all domestic airline passengers average but 220 miles per trip."

The RTCA program will benefit the private flyer, the Administrator said. "Small personal-type aircraft in the United States number about 90,000," he said. "Although this total is impressive, sales of small planes have dropped off sharply in the past 2 years, and this potentially important segment of our economy shows signs of stagnation."

A growing number of people believe that the natural expansion of private flying is being stifled by lack of utility in our present types of small aircraft. To some extent, this is a matter of engineering and

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Chairman Views Outlook for 1949 In Civil Aviation

Prospects for the continued economic growth of air transportation are favorable, Joseph J. O'Connell, Jr., Chairman of the Civil Aeronautics Board said last month in a statement before the Committee on Interstate and Foreign Commerce of the United States Senate.

"For the future," he said, "the present degree of competition within the industry, the entry into the industry of new local carriers, and the steps which we have initiated relative to mail pay, promise to provide the necessary spur to continued development."

"Although there are many problems which require our attention and the attention of the industry, as well as legislative action on the part of the Congress, we believe that in terms of the four standards which we have applied—the size and scope of the industry, the prices which it charges the public, its financial strength and the amount of government support required—the past record of this industry is good and the future attractive."

At the outset of his statement, he outlined the general policy guidelines set out in the Civil Aeronautics Act within which the Board functions. "These policies are a directive to the Board to regulate and develop the airline industry so that it may make a maximum contribution to our postal service, our foreign

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CAA Specialists Named on Mission to Greece

Thirteen Civil Aeronautics Administration specialists have been named as members of an Economic Cooperation Administration civil aviation mission to Greece, D. W. Rentzel, Administrator of Civil Aeronautics, and Paul G. Hoffman, ECA Administrator, announced last month.

Under an agreement with the Greek Government concluded on February 25, the mission will assist in the establishment, maintenance, operation and improvement of Greek civil aviation facilities. In addition, they will train Greek personnel in the operation and maintenance of the facilities.

This program is designed to aid that country in

supplying the minimum air navigation facilities necessary for safe and dependable international civil air transportation.

CAA personnel will act in an advisory capacity in matters pertaining to Greek civil aviation and will be responsible to the Chief of the Economic Cooperation Administration mission to Greece.

The mission is expected to stay in Greece for about one year. The CAA group is headed by Kenneth Matucha, who has been serving as Superintendent of the Airways Operations Branch in Kansas City. The CAA group will be joined by a meteorology specialist from the United States Weather Bureau.

Board Proposes 5-Year Extensions For Two Feeder Line Air Carriers

The Civil Aeronautics Board last month announced that it proposed to extend for a period of 5 years the temporary certificates of Southwest Airways, and Pioneer Airlines, and at the same time announced that it proposed to allow the temporary certificate of Trans-Texas Airways to expire in accordance with the terms of its original temporary 3-year certificate. All three air carriers are feeder airlines certificated by the Board for a temporary period of 3 years each.

Southwest Airways' certificate is proposed to be extended for a period of 5 years from its expiration date of November 22, 1949, with the provision that the uneconomic, competitive situation existing at Eureka, Red Bluff, Monterey, and Santa Barbara, Calif., be remedied by suspension of service to these points by United Airlines for a period of 5 years. The Board has under consideration proposals of Southwest for amendments and additions to its route in the Additional California-Nevada Service, now submitted for decision. Southwest now operates from Los Angeles, Calif., to Medford, Oreg., via various intermediate points.

Certificate Extension Not Favored.—The Board proposes that the certificate of Trans-Texas Airways be permitted to expire on May 13, 1950, in accordance with the terms of the certificate. Trans-Texas now operates local service in the Texas area.

The Board's proposals for Pioneer Airlines contemplate extension for 5 years of Pioneer's Houston-Amarillo, Houston-Dallas and Dallas-Midland-Odessa segments; 1-year extension of the Lubbock-Albuquerque segment; elimination of the Amarillo-El Paso segment; extension of the Dallas-Waco-Temple portion of the Dallas-Houston segment to Austin, Tex.; and the addition of Temple and Bryan, Tex., as the alternate intermediate points between Austin and Houston on the Houston-Amarillo segment.

It is further proposed that service by Continental Airlines for Las Vegas, N. Mex., be suspended for 5 years; Braniff's certificate to serve Waco and Lubbock be suspended for 5 years, and that American's certificate to serve Midland-Odessa, Tex., be suspended for 5 years. American already has before the Board a petition to suspend service at Abilene and Big Spring, which are also served by Pioneer.

Pioneer's routes are also proposed to be modified by the addition of segments of Trans-Texas routes between Dallas and Houston, Dallas and San Angelo, via certain intermediate points. Pioneer's certificate, unless extended, will expire November 14, 1949.

National Route Pattern Studied.—The Board's recommendations in this proceeding are part of a broader undertaking involving a survey of the entire air route pattern of the nation. The Board stated that while "there is little in the record of feeder air carrier experience to encourage a belief that any of such carriers possess, under presently foreseeable conditions, the inherent characteristics for commercial self-sufficiency * * * there is considerable basis, however, for concluding that feeder carriers in the aggregate have made a substantial contribution for the development of an air transportation system properly adapted to the present and future needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the national defense." Whether the contribution of a given feeder carrier is currently worth its cost in public funds is necessarily a matter of judgment, based on the showing of that carrier and the peculiar circumstances prevailing in the locality of its operations."

It was recognized that while the value of the feeder airlines in terms of national defense is not susceptible of precise statistical measurement, it is nevertheless

clear that their national defense value is considerable, the Board said.

Competition Is Factor.—The Board believes, in general, that feeder service should seldom, if ever, be competitive, and that where a feeder carrier's route is duplicated by a trunk-line carrier and such route is not necessary to the trunk-line carrier's operation, then such route should be served by the feeder carrier alone, the announcement stated. Conversely a route that is a necessary and integral part of a trunk-line system, and economically essential, then such route should not be served by a feeder.

The Board stated its conclusion that feeder routes should be adjusted to avoid duplication between communities served by two feeders. "Of course," the Board said, "these general objectives cannot be achieved immediately in many cases, and may not be possible to fulfill in particular situations, but they represent salutary principles which are of importance in working out the appropriate relationship between the feeder carriers and the other certificated carriers."

Canadian Pacific Air Lines Granted Permit by Board

The Civil Aeronautics Board announced last month that it had issued to Canadian Pacific Air Lines, Limited, a foreign air carrier permit authorizing air transportation of persons, property and mail between Whitehorse, Yukon Territory, Canada, and Fairbanks, Alaska, via Dawson, Yukon Territory. At the same time the Board canceled the permit of Trans-Canada Air Lines at its request. This permit was issued in 1945, authorizing air transportation between Whitehorse and Fairbanks. The Board's orders were approved by President Truman on March 31, 1949.

Canadian Pacific Air Lines, a wholly owned and controlled subsidiary of Canadian Pacific Railway Company, has been operating the Whitehorse-Fairbanks route, in lieu of Trans-Canada, for several years, with the approval of the Canadian Government and the Board. In August 1948 the Canadian Government designated Canadian Pacific as the airline to operate from Whitehorse to Fairbanks via Dawson, and canceled the license of Trans-Canada to operate the Whitehorse-Fairbanks route.

The Board, after a finding that Canadian Pacific is fit, willing, and able to operate the Whitehorse-Fairbanks service, and that the service is in the public interest, stated that the permit issued to Canadian Pacific is subject to any treaty, convention, or agreement affecting international air transportation to which Canada and the United States are parties.

Information on Navigation Given

Practical information about basic navigation of aircraft is presented in brief form for the use of the private pilot in "Path of Flight," a Civil Aeronautics Administration publication on sale at 40 cents a copy by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

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TACA Carrier Permit Extended Three Years

The Civil Aeronautics Board announced last month that it had extended the foreign air carrier permit of TACA, S. A., for air service from San Salvador, El Salvador to New Orleans, for a period of 3 years, and amended the permit to authorize service to Guatemala City, Guatemala, and Belize, British Honduras.

At the same time the Board denied TACA's request for renewal and amendment of its permit for service between San Salvador and Miami. The Board's order was approved by President Truman on March 30, 1949.

TACA had, in January, 1947, been issued permits to operate air service between San Salvador and New Orleans, and San Salvador and Miami. Operations were suspended, by TACA, on the Miami route, and the Board found that under the circumstances this authorization should not be renewed in view of the fact that the applicant has no present plans to provide service for it.

Permit Had Expired.—The permit for the San Salvador-New Orleans service expired in July 1947, due to the withdrawal of the United States from the International Air Transport Agreement. TACA has been operating on this route, however, since that time under the Administrative Procedure Act, which provides that when a certificate expires without sufficient time for action on an application for its renewal, it shall continue in effect until such action is taken.

The Board said that at the time of the issuance of the original permits, 98 percent of TACA's stock was owned by TACA Airways, a Panama corporation. Three-fourths of the stock of the Panama corporation was owned in turn by citizens of the United States, the principal holder being Transcontinental & Western Air Inc. At the present time 93 percent of the stock of the Panama corporation is held by citizens of the United States, with Waterman Steamship Corp. controlling the Panama corporation through certain of its subsidiary companies.

International Developments Considered.—The Board said that it limited the permit to 3 years so that it may deal with any international developments during this period, and also to cope with any situation adverse to the public interest resulting from the Waterman control.

The Board also said that the requirements of reciprocity are important in this case, and outweigh the factors created by the control of TACA by a steamship company.

Incentives Needed for Management To Cut Costs, Board Chairman Says

The point has been reached where serious consideration must be given to the question of how to provide incentives to air carrier management which will reduce the cost of the Government's air mail pay bill, Chairman Joseph J. O'Connell, Jr., of the Civil Aeronautics Board told the Association of the Bar of the City of New York recently. In 1948, the Federal Government paid the airlines approximately \$94,000,000 in the form of air mail pay, he said, adding that it is not unlikely that mail pay during 1949 will run at an annual rate of \$125,000,000.

The Board has no figures as to exactly what proportion of the total cost of air mail represents fair compensation and what represents subsidy, he said, adding: "We plan to find out what it is with the degree of precision which the present state of the accounting and cost allocation arts will permit.

"But if we are building up the type and the size of air transport system that we really want, if we know where we are going and are making progress toward our objective, the exact amount of the air mail pay bill is not of great significance. In terms of its potential contribution to our economy, our postal service and our defense, a well-designed and properly functioning air transportation system would be worth many times the present level of mail pay."

Effect of Subsidy Significant.—"The significant problem, as I see it, therefore, is the effect which subsidy, great or small, may have on the airlines and whether in using the device of mail pay we are working toward a sound air transportation system of the type and size we want. Because I believe that the essence of our economic system lies in the freedom of large numbers of business men to make and execute sound economic decisions, I might say that my chief concern over mail pay is whether or not it leads airline management to behave like business men and to make their decisions as business men normally do."

The Board's authority to fix air mail rates, he explained, is found in the Civil Aeronautics Act of 1938. "That Act was passed at the close of a 4-year period during which the air transportation industry had been in turmoil," he continued. "The turmoil started with the cancellation of the mail contracts in 1934 and the start of competitive bidding for air mail routes. It ended with the writing and passing of an entirely new and comprehensive Act dealing with civil aviation in general and with air transportation in particular, on both the economic and safety phases of the problem."

Policy Fixed by Statute.—"The Civil Aeronautics Act of 1938 is a very broad statute. Besides the usual regulatory provisions to be found in virtually every statute governing public utilities and transportation, the Act contains strong and unequivocal language to the effect that it is the policy of the government to promote and foster the rapid growth of civil aviation and air transportation. Such promotion is to be provided for through decisions of the government agencies concerned, through increased and more stringent safety controls, through regulated competition over routes, and last, but by no means least, by backing up air transportation with cash in the form of mail pay.

"Section 406 (b) of the Act provides specifically for paying the carriers mail pay in excess of the compensatory rates for mail carriage." This section, he added, "constitutes a directive to the Board to provide the carriers with the mail pay they need to maintain and develop an air transportation system, unless other circumstances or other considerations outweigh the policy as set forth."

Board Procedure Is Explained.—He explained in detail the procedure followed by the Board in fixing mail rates.

"In recent rates cases involving the future period we have adopted a sliding scale formula which pro-

vides for higher rates of return on the carrier's investment at higher load factors," he said. "Although this formula provides some incentive to management to control excess capacity, this incentive is greatly weakened by the ability of the carriers to file protective rate petitions. The usual economic consequences of over-production in industry and in other public utilities thus do not impinge on airline managements. The inevitable result has been, is, and promises to be, the operation of excess capacity the costs of which are borne by the government.

"Let us take the case of routes—another instance of the effect of subsidy on airline management. Under the Act and our present concept of establishing mail rates a carrier is virtually assured that the government will make up any losses involved in operating a given route pattern, provided there is not a flagrant overscheduling."

Incentives Are Lacking.—"My question is: What incentives are provided either in the Act or by our mail rate action which would lead the carriers now and in the future to be sure that its routes were laid out in the best possible manner, that highly uneconomical points were eliminated and that its operations over a given route made good economic or business sense? So far as I know, there are no such incentives.

"I, as a public servant, am gravely concerned that there have been no instances since I have been on the Board where a carrier has come to us and said, 'Look, this route is uneconomic and we believe that you should allow us to give it up.' Indeed there have been only four instances of where carriers have urged the abandonment of points on a route.

"It is, of course, the responsibility of the Board to lay out and maintain a sound and economic route pattern, but the Board cannot discharge this responsibility unless the carriers assist it. The carriers are not likely to assist us so long as they are not provided with any economic incentive for so doing."

Airline Financing Discussed.—Turning to the subject of airline financing, he asked: "What incentives are there either in the Act or in our mail rate action which make it imperative and compelling upon the carriers to finance themselves in the soundest conceivable way so that they will not only have adequate funds to meet their capital obligations, but also so that their capital structures may be reasonably depression-proof? I know of few incentives at the present time. The record of the growth of airline debt since the war is almost irrefutable evidence of the lack of such incentives.

"In a large part this incentive has been removed because the present Act tends to operate as a shield between the air carriers, and the ultimate in economic penalties—bankruptcy.

"Bankruptcy is, after all, in private enterprise the principal astringent that we have for washing away uneconomic operations. In the air transportation business, as it is conducted today, this astringent is no stronger than water. It seems to me that because of this factor, and perhaps also because the Board has no power to regulate the airlines' security issues, the financial structures of many of our air carriers have deteriorated to a remarkable extent."

E. S. Hensley Appointed Aviation Safety Director

E. S. Hensley has been appointed Director, Office of Aviation Safety, D. W. Rentzel, Administrator of Civil Aeronautics, announced last month.

He succeeds J. S. Marriott, who has returned to his former post as Administrator of the Sixth Region of the CAA in Los Angeles. Mr. Hensley had been deputy director of the office.

In according to Mr. Marriott's request to resume his former position as Regional Administrator of the Sixth Region, the Administrator wrote him in part as follows:

"I feel it has been very helpful in the reorganization of the Civil Aeronautics Administration to have had the benefit of your intimate knowledge of the operating problems encountered in the field.

"In developing a sound organizational structure, a smooth working relationship between Washington and the field is vital. We must have uniform application of policies, but these policies must be framed in the first place with a view toward their workability in the field.

"You have made an important contribution toward the establishment of such a two-way flow of ideas, and I agree with your view that you now can be most valuable in administering our program in a key region."

Mr. Hensley joined the CAA's predecessor organization in 1937 as an aeronautical inspector, after 10 years in aviation as a pilot and instructor, most of them with McMullen Aircraft, Tampa, Fla. He became Assistant Chief, General Inspection, in 1941, and in 1946, after 3 years of service with the Air Force as a lieutenant colonel, was appointed Deputy Assistant Administrator for Safety Regulation.

Year 1949 a Crossroads.—He expressed the belief that "the year 1949 constitutes a kind of crossroads in the development and evolution of air transportation." If no effort is made to explore ways in which incentives to sound management practices can be provided "our air mail pay bill can be expected to continue to rise," he said, "but what is far more important, we may seriously and permanently undermine the economic soundness of our air transportation system because of the atrophy of the ability of airline management to behave like businessmen."

The Board has taken steps along the lines suggested, the Chairman said, in connection with its recently issued Economic Program for 1949. "We have, I hope, made a start in the direction at least of arranging for the collection of the necessary factual material upon which an ultimate decision can be made," he said. "It is barely a start, however—barely more than a statement of good intentions."

The Chairman said he did not mean "we must take a meat-ax approach to the problem of subsidy and throw the industry into the kind of turmoil in which it found itself preceding the passage of the Civil Aeronautics Act of 1938. On the other hand, it does not mean that we can continue along the same lines in which we have been moving since the war, no matter how comforting to the airlines that course of action might be. Between these extremes lies the road we must follow if we are to continue the development of an air transportation system which is privately owned and managed and which rests on a sound economic foundation. I am confident that in the year ahead we can do much to find that road."

Airline Mileage Figures Given

The 16 domestic trunk airlines flew 86.46 percent of their scheduled mileage in January of this year, an announcement by the Civil Aeronautics Board reveals.

Nation Needs RTCA Air Navigation Program To Bolster Defenses, Administrator Says

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design changes to bring increased usefulness and lower operating costs to the small plane owner."

Available for Private Planes.—"However, the basic elements of the RTCA system, such as the omnirange, precision beam radar, and very high frequency communication, are readily adaptable to personal-type aircraft at modest cost to the owners. The RTCA program offers a much simpler, more reliable, and more efficient navigation system than ever before has been available. By increasing the usefulness of present and future types of small planes, the RTCA program will stimulate the use of such planes for personal and business transportation. This, in turn, will bring economic benefit to the small-plane manufacturing industry, to the aircraft maintenance businesses, to our civil airports, and to the small plane owners themselves."

The Administrator told the Committee that civil and military aviation "are laboring under the intolerable handicap of an inadequate airway and airport traffic control system, which was designed and installed when aviation was in its infancy.

"All-weather flying, schedule reliability, and mass movement of aircraft under instrument conditions can be accomplished only if the United States installs an improved, modern air navigation and control system," which, he said, is no longer merely "desirable" but is "an urgent necessity."

"The swift pace of modern war does not wait for favorable weather; our very existence as a nation might conceivably depend on our ability to move large numbers of aircraft safely and surely to a point under attack, or to a point of departure from the continental United States," he added.

Two Aviation Weaknesses Listed.—Two weaknesses, uncertain air travel schedules and a safety record which is "none too good when compared with other forms of public transportation", have grown "glaringly conspicuous," the Administrator said. "These two weaknesses of present-day aviation are closely related. They center around the problems of bad-weather air navigation in three-dimensional space."

Weather delays, cancellations, and diversions cost the airlines millions in direct costs and in the loss of potential passengers and cargo traffic, the Administrator said. At the same time, weather irregularities were even more serious from the standpoint of national defense.

The SC-31 report outlined plans for a common air traffic control system, useful equally to the armed services, the scheduled airlines, non-scheduled air carriers, and private fliers, the Administrator continued. "The plan was divided into two parts—a transition program to be completed in about 5 years, and an ultimate program requiring another 10 years."

Older System Inadequate.—The older air navigation system, which has proved inadequate but still is in general use today, is based on low-frequency four-course radio ranges. The SC-31 program calls for a completely new kind of air navigation range called the omnirange. The Administrator outlined the advantages of the new system as follows:

"1. The pilot can fly by eye instead of ear. He holds his course by watching the indications on a vertical needle.

"2. The omnirange operates in the very high frequency part of the radio spectrum, which is free from static interference.

"3. The omnirange provides a large number of courses. Allowing a course width of 15 degrees, for example, there are 24 flight paths to or from the range.

"4. The omnirange eliminates the possibility of quadrant confusion. On a simple indicator, the pilot can read in degrees his direction from the omnirange at all times, and a simple 'to'-'from' indicator tells him whether the bearing shown is to or from the station.

"On these points alone, the omnirange will contribute substantially to easier, safer, and more reliable air navigation. But under the SC-31 program, two other devices will be combined with the omnirange to produce something close to the optimum in simplicity and flexibility. These devices are called Distance Measuring Equipment hereafter referred to as (DME), and the course line computer.

"The present air navigation system includes radio markers at intervals on the airways to tell the pilot how far he has progressed along his route. They cause a light to blink in the cockpit for a few seconds, and make a characteristic sound in the pilot's earphones.

"Since these markers are rather widely spaced, the pilot is certain of his exact position for only a small part of his total flight time. This is a serious deficiency, since the ground traffic control system depends on accurate position reports from the pilot. With the present system, the accuracy of these position reports varies considerably."

Will Eliminate Uncertainty.—"DME equipment, installed at each omnirange, will do away with this uncertainty. In a suitably equipped plane, the pilot will be able to read on his DME dial the exact distance in miles to or from the omnirange to which he is tuned.

"The omnirange indicator, mentioned earlier, plainly shows the pilot the bearing of the range. The DME pointer tells him his distance. The pilot, therefore, will know at all times his exact position in space and can provide the accurate information necessary for ground traffic control.

"The course line computer introduces additional flexibility to the omnirange-DME combination. The computer, a light-weight airborne electronic 'brain', makes it unnecessary to fly directly to or from an omnirange. Using the computer, DME, and omnirange, a pilot can fly a straight course between any two selected points.

"The pilot sets certain information into the computer. Then the computer, using additional data received from nearby omniranges and DME transmitters, continuously solves the specific navigation problem involved. All the pilot has to do is to keep the vertical needle centered, as he does in flying to or from an omnirange.

"These three units working together—the omnirange, the DME, and the computer—will make off-airway navigation almost as easy and accurate as on-airway flying. And in congested airways they will permit operation of multiple airways, parallel to each other and a few miles apart, in whatever number current traffic demands."

Installation Well Advanced.—"The CAA omnirange installation program is well advanced. As of February 1, 1949, there were 272 omniranges operable and 64 others in various stages of construction. The interim program calls for about 400 of the new ranges, some of which will be conversions from an earlier type of very high frequency range.

"Several companies now are manufacturing omnirange receivers. These are available in models for large transport-type aircraft, and also in low-priced designs for private pilots. By 1950, the omniranges will be in fairly wide operational use; by 1954 they are expected to be the air navigation standard.

"Two DME ground transmitters are now operating, and several others are under construction. Operating

models of airborne DME equipment are undergoing service testing. Both the DME and course line computer are expected to reach final development during 1950, and come into operational use soon thereafter.

"The SC-31 program calls for very high frequency communications between air and ground. All CAA airway and airport facilities have been equipped with transmitters and receivers operating in this static-free radio band, and an increasing amount of commercial, military, and private plane traffic is being handled over the newer frequencies."

To Make Travel Safer.—"When the devices mentioned come into general use, travel along our airways obviously will be safer and more reliable. But they meet the needs of en route navigation only. Equally important, and more complex, is the problem of getting aircraft down through low ceilings to safe landings—and doing so on a precise, rapid schedule which will permit maximum use of the runways and eliminate the expensive and annoying 'stacks' of planes waiting their turns to land."

"Under the SC-31 transition program, radio and radar work together to make bad weather landings routine and rapid. The fundamental pieces of equipment are the Instrument Landing System (ILS), which operates on radio principles, and Precision Beam Radar, which uses new techniques developed during the war. These are supplemented, under the program, by tower surveillance radar, which permits tower traffic controllers to 'see' all aircraft in the vicinity, and by a variety of other devices now in research stages.

"The Instrument Landing System uses transmitters located at the airfield to project two radio beams into space. One beam, called the localizer, guides the aircraft laterally to keep it headed toward the centerline of the runway. The other beam, called the glide path, guides the plane's rate of descent and vertical angle of approach. The ILS gives the pilot something like an invisible highway, down which he can fly by instrument to a safe landing."

Indicator Shows Correct Path.—"The pilot making an ILS approach watches a cross-pointer indicator in the cockpit. Two needles, one hinged vertically and the other horizontally, cross at right angles when the plane is on the correct approach path. The horizontal needle is actuated by the glide path transmitter on the ground; the vertical needle by the localizer transmitter. By watching the cross-pointer indicator, the pilot can tell when he begins to deviate from the proper approach path, and knows how to make appropriate corrections.

"Vertical-beam radio markers along the approach path indicate to the pilot how far he has progressed toward the runway. Eventually, the need for these markers will be eliminated by distance measuring equipment.

"Precision beam radar, developed during the war and since improved, operates on an entirely different principle. Here a traffic controller, watching a radar screen on the ground, 'talks' the pilot down to the runway over ordinary voice radio. The ground controller, guided by the indications on the screen, tells the pilot to 'fly right', 'fly left', 'fly up', or 'fly down', as necessary.

"The ILS and the precision radar systems each have certain advantages and disadvantages. Used together, they give the pilot a continuous double check on his position, and constitute the safest and surest landing method known today."

Ceiling Minimums Reduced.—"Already, these landing systems have made it possible for the CAA to reduce ceiling minimums to 300 feet from 500 feet at 33 cities, and to 200 feet at 34 others. This has brought about marked improvement in schedule regularity at these points. As of February 1, there were 83 civilian ILS installations in the country, with another 62 in engineering stages. Civilian precision

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beam radar sets, obtained from military sources, were operating at New York, Washington, and Chicago. Funds are available for 16 other installations, which will become operable during fiscal years 1950 and 1951.

"As mentioned earlier, the only source of information available to ground controllers has been position reports from pilots flying in the vicinity. This is a particularly serious weakness in the vicinity of major airports, where traffic congestion reaches a peak. The SC-31 interim program calls for surveillance radar equipment in airport traffic control towers so the controller will have positive information about nearby aircraft.

"Surveillance radar will serve several purposes in addition to the obvious one of reducing collision hazards. The surveillance equipment will be used to guide aircraft to a point where precision beam radar can pick them up for ground controlled landings. The element of certainty introduced by surveillance radar will permit landings in more rapid succession than otherwise would be safe, and reduce delays caused by missed approaches. Also important will be reduction in delays caused by 'lost' aircraft, which sometimes disrupt traffic in an area for as long as 2 hours. The CAA is in the process of procuring 30 surveillance radars, which will go into service in 1950 and 1951."

To Mechanize Posting System.—The Administrator said other devices of the transition program are intended to mechanize the laborious hand posting system now used to control airway traffic, and to secure more efficient use of airport runways by means of special calculating equipment.

The SC-31 transition program is intended to meet the current military and civilian needs, and those of the next 5 years, the Administrator stated.

"The Berlin airlift, which opened the eyes of the world to the possibility of supporting major military operations by air alone, depended for its success on major elements of the RTCA transition program, such as very high frequency communication and radar-controlled landings," the Administrator said in stressing the importance of the SC-31 program to national defense. He quoted a recent statement by the Secretary of the Air Force, who said:

"Limitations of the present air navigation and traffic control system prevent the expeditious handling of the current traffic load. In prosecuting a war, therefore, it would be absolutely impossible to handle the anticipated increase imposed on this system, safely and without delay."

Tailored for Defense Needs.—The Administrator said that the RTCA program, approved by all branches of the military establishment, "has been carefully tailored to meet national defense as well as civilian needs. A major reason for selecting the omnirange and distance measuring equipment, for example, lay in its unique adaptability to military needs. A single omnirange-DME installation on a beachhead, island, or near a fighting front, meets the navigational requirements for all planes in that area.

The radar and communication chains of the common system will be integrated into the military early-warning network. The common system equipment is not designed to take the place of military radar, but to supplement it in case of emergency.

The increasing military use of jet aircraft has introduced a serious complication into air traffic control. A conventional airliner carries substantial fuel reserves. However wasteful and inefficient the process, an airliner can, if necessary, hold near an airport for long periods of time awaiting its turn to land. Jet planes have no such fuel reserve; unless they can be

Air Regulations . on May 1, 1949

TITLE	No.	PART			MANUAL		
		Price	Date	No. of Amendments	Price	Date	No. of Amendments
Aircraft							
Airworthiness Certificates	1	\$0.05	10/15/48	4	None	None	
Type and Production Certificates	2	.05	7/1/46	1	\$0.10	8/1/46	
Airplane Airworthiness—Normal, Utility, Acrobatic, and Restricted Purpose Categories	13	.25	12/15/46	4	None	None	
Airplane Airworthiness	4a	.25	11/1/47	1	.45	7/1/44	2
Airplane Airworthiness Transport Categories	14b	Free	11/9/45	10	None	None	
Rotocraft Airworthiness	6	.10	5/24/46	2	None	None	
Aircraft Airworthiness, Limited Category	9	.05	11/21/46	2	None	None	
Engine Airworthiness	13	.05	8/1/41	None	None		
Propeller Airworthiness	14	.05	7/15/42	1	.15	5/1/46	
Equipment Airworthiness	15	.05	5/31/46	None	7/1/38		
Radio Equipment Airworthiness	16	.05	2/13/41	None	2/13/41		
Maintenance, Repair, and Alteration of Aircraft, Engines, Propellers, Instruments	18	.05	9/1/42	.60	6/1/43		
Airmen							
Pilot Certificates	20	.05	11/10/48	2	None	None	
Airline Pilot Rating	21	.05	10/1/42	6	None	None	
Lighter-than-air Pilot Certificates	22	.05	10/15/42	5	None	None	
Mechanic Certificates	24	.05	7/1/43	3	None	None	
Parachute Technician Certificates	25	.05	12/15/43	5	None	None	
Traffic Control Tower Operator Certificates	26	.05	10/10/45	5	None	None	
Aircraft Dispatcher Certificates	27	.05	7/1/46	3	None	None	
Physical Standards for Airmen	29	.05	1/10/46	None	None		
Flight Radio Operator Certificates	33	.05	8/1/47	1	None	None	
Flight Navigator Certificates	34	.05	8/1/47	1	None	None	
Flight Engineer Certificates	35	.05	11/10/48	1	None	None	
Operation Rules							
Air Carrier Operating Certification	40	.10	7/10/46	3	None	None	
Scheduled Air Carrier Operations Outside Continental United States	41	.10	7/20/48	4	None	None	
Non-scheduled Air Carrier Certification and Operation Rules	42	.05	8/1/46	10	.15	11/1/46	
General Operation Rules	43	.05	12/1/47	5	None	None	
Foreign Air Carrier Regulations	44	.05	11/1/47	1	None	None	
Commercial Operator Certification and Operation Rules	45	Free	6/1/49	None	None		
Operation of Moored Balloons	46	.05	9/28/47	None	None		
Transportation of Explosives and other Dangerous Articles	49	.05	7/1/45	1	None	None	
Air Agencies							
Airmen Agency Certificates	50	.05	4/30/46	.15	5/15/46		2
Ground Instructor Rating	51	.05	12/15/43	3	None	None	
Repair Station Rating	52	.05	10/1/42	1	No stock	2/41	
Mechanic School Rating	53	.05	8/1/42	1	Free	5/40	
Parachute Loft Certificates and Ratings	54	.05	1/21/43	.15	7/1/43		
Air Navigation							
Air Traffic Rules	60	.10	10/8/47	4	\$1.00	8/1/48	
Scheduled Air Carrier Rules	61	.10	6/15/48	4	None		
Notice and Reports of Aircraft Accidents and Missing Aircraft	62	Free	5/1/49	None	None		
Miscellaneous							
Rules of Practice Governing Suspension and Revocation Proceedings	97	Free	1/1/47	1	None	None	

¹ Certain aircraft may comply with the provisions of this part or part 4a.

² Special regulations SR-324, SR-324-A.

³ Special regulations SR-323, SR-323-A, SR-326.

⁴ Special regulations 397, 397-A, SR-325. Interpretation No. 1.

⁵ Special regulation SR-325.

⁶ Special regulations 397, 397-A, SR-323, SR-323-A, SR-325.

⁷ Combined with Flight Information Manual, Vol. 3, No. 2.

⁸ Revised Part 42 "Irregular Air Carrier and Off-Route Rules" will become effective June 1, 1949.

NOTE: Those parts and manuals for which there is a price are obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Currency is sent at sender's risk. Amendments, Special Regulations and free Parts are obtained from the Publications Section, Civil Aeronautics Board, Washington 25, D. C.; free Manuals from the CAA Office of Aviation Information, Dept. of Commerce, Washington 25, D. C.

assured of an immediate landing they must operate far below their normal ranges."

Traffic Flow Control Sought.—"The answer to this problem lies in traffic flow control, which assures a reserved landing time for each aircraft before it leaves the ground. The transition program will meet the immediate needs of jet aircraft in this respect, and the ultimate system will provide complete flow control.

"Without the common transition system and common ultimate program of air navigation, the Air Force and MATS obviously would have to install an airway system of their own to meet their National Defense obligations. Such a system would duplicate expenditures necessary for civil aviation, would offer the taxpayer no prospect of monetary return."

Improved airways would tend to stabilize the aircraft manufacturing industry, the Administrator said. "The Congressional Aviation Policy Board, the President's Air Policy Commission, and the Air Coordinating Committee, have recommended annual peacetime

production no lower than some 60 million airframe pounds," he declared.

"In contrast, estimates appearing in the public press indicate that about 25 million pounds of military aircraft will be delivered in 1949 and 37 million pounds in 1950. In January 1948, the Department of Commerce prepared a study for the ACC in which it was estimated that civil transport production would run about 5 million airframe pounds annually in the period 1948-1952."

Increased Production Possible.—"But were civil air transportation able to grow to a reasonable portion of its apparent potential size, annual production of civil transports could possibly double or triple the current output, thus adding to the peacetime level from which the manufacturing industry could expand in an emergency. The increased fleet would, in itself, be of considerable military importance. But what would be vitally valuable would be a healthy aircraft manufacturing industry in being, supported to a significantly lesser extent by the U. S. taxpayer."

Regulations of The Administrator

(Through April 29, 1949)

Note: Date of publication in the Federal Register and the price of that issue of the Federal Register are indicated, in parentheses. Copies of the Federal Register may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Currency is sent at sender's risk.

Part 403—Procedure of the Civil Aeronautics Administration. (Published as Part 651; September 11, 1946-Part 2, Section 2, 40c.)

Amendment 1. (November 13, 1946. Out of print.)

Amendment 2. (December 4, 1946. Out of print.)

Amendment 3. (January 3, 1947. 15¢.)

Amendment 4. (January 7, 1947. 15¢.)

Amendment 5. (April 8, 1947. 15¢.)

Amendment 6. (April 30, 1947. 15¢.)

Amendment 7. (September 16, 1947. 20¢.)

Amendment 8. (June 5, 1948. 15¢.)

Amendment. (September 11, 1948. 15¢.)

Part 406—Rules of Practice Governing Proceedings to Alter Amend., or Modify Certificates. (Published as Part 652; March 27, 1947. 15¢.)

Part 407—Seizure of Aircraft. (February 19, 1949. 15¢.)

(Supercedes Part 531, effective April 1, 1949.)

Part 450—Inter-American Aviation Training Grants. (Published as Part 659; May 21, 1948. 15¢.)

Part 501—Aircraft Registration Certificates. (April 30, 1947. 15¢.)

Part 502—Dealers' Aircraft Registration Certificates. (April 30, 1947. 15¢.)

Part 503—Recordation of Aircraft Ownership. (September 11, 1948. 15¢.)

Part 504—Recordation of Encumbrances Against Specifically Identified Aircraft Engines. (September 11, 1948. 15¢.)

Part 505—Recordation of Encumbrances Against Aircraft Engines, Propellers, Appliances, or Spare Parts. (September 11, 1948. 15¢.)

Part 550—Federal Aid to Public Agencies for Development of Public Airports. (March 18, 1948. 15¢.)

Amendment 1. (Apr. 30—corrected May 12—1948. 15¢ each.)

Amendment 2. (June 11, 1948. 15¢.)

Amendment 3. (November 4, 1948. 15¢.)

Amendment 4. (December 14, 1948. 15¢.)

Amendment 5. (January 4, 1949. 15¢.)

Amendment 6. (January 29, 1949. 15¢.)

Part 555—Acquisition by Public Agencies for Public Airport Purposes of Lands Owned or Controlled by the United States. (January 9, 1947. 15¢.)

Amendment 1. (February 21, 1947. 15¢.)

Amendment 2. (April 1, 1948. 15¢.)

Part 560—Claims for Rehabilitation or Repair of Public Airports Damaged by Federal Agencies. (January 9, 1947. 15¢.)

Amendment 1. (October 21, 1948. 15¢.)

Part 570—General Regulations of Washington National Airport. (Published as Part 510; January 23, 1947. 15¢.)

Amendment 1. (December 30, 1948. Pt. 1. 20¢.)

Amendment 2. (January 5, 1949. 15¢.)

Part 571—Aeronautical Rules for the Washington National Airport. (Published as Part 511; January 23, 1947. 15¢.)

Amendment 1. (January 5, 1949. 15¢.)

Part 600—Designation of Civil Airways. (June 28, 1947. 15¢.)

Amendment 1. (September 16, 1947. 20¢.)

Amendment 2. (December 3, 1947. 15¢.)

Amendment 3. (March 6, 1948. 15¢.)

Amendment 4. (April 27, 1948. 15¢.)

Amendment 5. (May 15, 1948. 15¢.)

Amendment 6. (June 29, 1948. 15¢.)

Amendment 7. (August 17, 1948. 15¢.)

Amendment 8. (September 30, 1948. 15¢.)

Amendment 9. (October 15, 1948. 15¢.)

Amendment 10. (October 21, 1948. 15¢.)

Amendment 11. (November 30, 1948. 15¢.)

Amendment 12. (December 4, 1948. 15¢.)

Amendment 13. (December 29, 1948. 30¢.)

Amendment 14. (February 2, 1949. 15¢.)

Amendment 15. (April 1, 1949. 15¢.)

Part 601—Designation of Control Areas, Control Zones, and Reporting Points. (June 28, 1947. 15¢.)

Amendment 1. (October 15, 1947. 20¢.)

Amendment 2. (December 3, 1947. 15¢.)

Amendment 3. (October 23, 1947. Out of print.)

Amendment 4. (December 3, 1947. 15¢.)

Amendment 5. (March 6, 1948. 15¢.)

Amendment 6. (April 27, 1948. 15¢.)

Amendment 7. (May 15, 1948. 15¢.)

Amendment 8. (June 29—corrected July 16—1948. 15¢ each.)

Amendment 9. (July 9, 1948. 15¢.)

Amendment 10. (August 17, 1948. 15¢.)

Amendment 11. (August 31, 1948. 15¢.)

Amendment 12. (September 30, 1948. 15¢.)

Amendment 13. (October 15, 1948. 15¢.)

Amendment 14. (October 21, 1948. 15¢.)

Amendment 15. (November 30, 1948. 15¢.)

Amendment 16. (December 4, 1948. 15¢.)

Amendment 17. (December 29, 1948. 30¢.) (Corrected January 26, 1949. 15¢.) Corrected March 1, 1949. 15¢.)

Amendment 18. (February 2, 1949. 15¢.)

Amendment 19. (February 19, 1949. 15¢.)

Amendment 20. (April 1, 1949. 15¢.)

Part 609—Standard Instrument Approach Procedure. (March 19, 1948. 15¢.)

Amendment 1. (September 11, 1948. 15¢.)

Part 610—IFR Altitude Minimums. (November 19, 1947. 15¢.)

Amendment 1. (November 26, 1947. 15¢.)

Amendment 2. (April 3, 1948. 15¢.)

Part 625—Notice of Construction or Alteration. (June 26, 1948. 15¢.)

Part 635—Reproduction and Dissemination of Current Examination Materials. (Published as Part 532; January 19, 1943. Out of print.)

Scheduled Air Carrier Operations

[Source: CAB Form 41]

Domestic: January–February 1949, 1948

Operator	Revenue miles January–February		Revenue passengers January–February		Revenue passenger-miles (000) January–February		Passenger seat-miles (000) January–February	
	1949	1948	1949	1948	1949	1948	1949	1948
Trunk Lines								
American Airlines	7,820,839	7,046,094	376,328	283,682	193,267	141,274	319,514	247,489
Braniff Airways	1,678,691	1,601,030	73,692	69,620	24,900	25,352	53,974	49,734
Capital Airlines	2,755,512	2,201,628	124,883	113,860	35,974	29,581	89,860	67,595
Chicago & Southern Air Lines	1,058,361	947,989	36,996	32,005	13,018	13,168	27,884	25,027
Colonial Airlines	496,389	352,022	20,907	14,460	5,670	4,101	10,423	7,381
Continental Air Lines	851,115	773,963	20,573	19,396	7,476	7,096	21,831	15,967
Delta Air Lines	1,967,567	2,005,038	73,678	61,101	33,760	27,604	58,553	57,956
Eastern Air Lines	8,156,063	7,913,497	314,283	284,298	170,899	170,465	280,507	285,181
Inland Air Lines	311,149	370,922	11,522	9,891	3,814	3,640	6,761	7,076
Mid-Continent Airlines	1,155,909	1,032,514	41,019	38,118	12,238	11,356	24,239	20,274
National Airlines	1,450,248	719,935	50,325	23,737	31,508	12,263	60,992	23,731
Northeast Airlines	491,039	453,925	34,592	29,297	6,557	5,448	15,046	14,540
Northwest Airlines	2,389,161	2,178,364	70,440	69,055	34,764	36,200	85,585	69,379
Transcontinental & Western Air	7,320,112	7,856,427	154,466	147,839	108,864	118,352	224,792	204,505
United Air Lines	7,115,752	8,176,120	248,566	209,302	147,550	122,004	252,278	203,457
Western Air Lines	936,718	965,677	36,236	40,312	14,160	15,667	30,875	31,274
Trunk total	16,287,625	14,602,145	1,688,506	1,445,973	838,359	743,571	1,563,114	1,330,566
Index (1948=100)	103,78	100,00	116,77	100,00	112,75	100,00	117,48	100,00
Feeder Lines								
All American Airways	260,519	233,825	0	0	0	0	0	0
Challenger Airlines	233,102	210,878	3,837	2,233	1,037	526	4,883	4,429
Empire Air Lines	150,938	145,501	4,024	1,502	854	335	3,170	1,455
Florida Airways	130,108	139,203	1,984	1,368	273	197	1,051	1,113
Los Angeles Airways	52,634	31,673	0	0	0	0	0	0
Monarch Air Lines	217,513	239,551	2,868	2,780	760	617	4,455	4,322
Piedmont Aviation	380,948	6,328	7,284	100	1,610	31	8,000	137
Pioneer Air Lines	542,779	357,593	11,378	8,290	3,096	2,132	13,168	8,617
Robinson Airlines	116,319	—	4,722	—	704	—	2,442	—
Southwest Airlines	380,560	314,784	13,215	9,154	2,476	1,765	7,992	6,145
Trans-Texas Airways	331,913	202,042	3,893	1,398	967	331	6,970	4,243
West Coast Airlines	177,869	164,655	6,444	5,068	818	683	3,736	2,988
Wisconsin-Central Airlines	176,187	4,224	1,704	23	249	4	1,419	38
Feeder total	3,181,389	2,050,458	61,353	31,918	12,844	6,621	57,286	33,487
Index (1948=100)	155,16	100,00	192,22	100,00	193,99	100,00	171,07	100,00
Territorial Lines								
Caribbean-American Airlines	103,071	64,567	15,094	12,897	1,091	797	2,552	1,606
Hawaiian Airlines	443,643	477,484	48,798	50,745	6,869	7,084	9,975	10,464
Territorial total	546,714	542,051	63,892	63,642	7,960	7,881	12,527	12,070
Index (1948=100)	100,86	100,00	100,39	101,00	100,00	100,00	103,79	100,00
Grand total	50,015,728	47,194,654	1,813,751	1,541,533	859,163	758,073	1,632,927	1,376,123
Index (1948=100)	105,98	100,00	117,66	100,00	113,34	100,00	118,66	100,00
Express								
Operator	Revenue passenger load factor (percent) January–February		Express January–February		Freight January–February		United States Mail January–February	
	1949	1948	1949	1948	1949	1948	1949	1948
Trunk Lines								
American Airlines	60,49	57,08	800,860	825,086	3,612,172	2,483,338	1,494,375	907,322
Braniff Airways	46,13	50,98	117,604	146,252	132,928	159,232	171,999	141,967
Capital Airlines	40,03	43,76	265,621	324,638	794,790	621,923	172,849	123,687
Chicago & Southern Air Lines	46,69	52,62	71,998	99,723	65,112	71,882	86,676	61,235
Colonial Airlines	54,40	55,56	7,145	7,868	8,909	2,762	14,399	12,660
Continental Air Lines	31,24	44,44	13,487	14,714	43,052	25,868	30,336	25,058
Delta Air Lines	57,55	47,63	100,686	141,875	220,624	221,641	153,799	153,112
Eastern Air Lines	56,41	51,44	11,453	7,047	14,226	5,220	16,494	16,330
Mid-Continent Airlines	50,49	56,01	24,866	27,545	35,250	27,292	46,152	36,893
National Airlines	51,66	51,68	74,201	77,622	151,739	155,151	103,576	8,551
Northeast Airlines	43,58	37,47	13,742	16,950	20,777	19,669	15,032	—
Northwest Airlines	40,62	52,18	257,678	263,120	506,391	174,184	352,065	334,985
Transcontinental & Western Air	48,43	57,87	759,867	937,823	1,423,244	1,298,893	1,369,957	1,626,127
United Air Lines	58,49	59,97	1,017,952	1,137,644	2,942,084	2,2		

Scheduled Air Carrier Operations

(Continued From Page 54)

International: January 1949

Operator	Revenue miles	Revenue passengers	Revenue passenger-miles (000)	Passenger seat-miles (000)	Revenue passenger load factor (percent)	Ton-miles flown			
						Express	Freight	United States mail	International parcel post
American Airlines	204,215	6,826	5,366	8,909	60.23	0	104,995	8,660	0
American Overseas Airlines	545,928	4,749	9,678	19,040	50.83	347,915	0	118,403	24,668
Braniff Airways	84,905	627	4,162	4,150	28.00	0	10,785	823	0
Chicago & Southern Air Lines	113,055	1,638	1,935	5,626	34.39	0	23,183	633	96
Colonial Airlines	62,514	873	692	2,751	25.15	0	4,695	634	72
Eastern Air Lines	61,480	1,413	1,470	3,592	40.92	0	48,590	4,780	112
National Airlines	40,663	3,564	1,064	2,081	51.13	14,354	0	980	0
Northwest Airlines	487,609	2,614	5,275	11,333	46.55	9,883	335,796	209,147	0
Pan American Airways:									
Atlantic Division	938,170	6,475	16,681	28,725	58.07	709,241	0	190,340	25,298
Latin American Division	2,528,229	59,617	46,313	92,303	50.17	1,408,711	0	225,000	0
Alaska Operations	187,845	2,534	2,876	5,753	49.99	257,241	0	34,410	0
Pacific Operations	1,467,477	6,476	19,345	33,985	56.92	410,240	0	448,231	0
Pan American-Grace Airways	485,201	7,292	8,661	16,223	53.39	109,828	26,827	29,738	0
Transcontinental & Western Air	971,784	5,044	15,898	32,870	48.37	573,972	0	200,118	39,581
United Air Lines	154,133	2,122	5,013	6,628	75.63	17,503	0	67,380	0
Uruba, Medellin & Central Airways	8,632	232	77	142	54.23	2,907	0	0	0
Total	8,345,140	112,096	141,506	274,111	51.62	3,861,795	554,871	1,539,277	89,827

Domestic: February 1949

Operator	Revenue miles	Revenue passengers	Passenger seat-miles (000)	Revenue passenger load factor (percent)	Ton-miles flown		
					Express	Freight	United States mail
Trunk Lines							
American Airlines	3,871,331	193,064	94,433	158,178	59.70	369,522	1,803,727
Braniff Airways	840,418	38,928	12,894	26,773	48.16	56,415	65,322
Capital Airlines	1,380,988	61,937	17,467	44,950	38.86	124,845	388,788
Chicago & Southern Air Lines	539,852	19,780	6,841	14,137	48.39	37,454	32,603
Colonial Airlines	250,864	10,829	2,916	5,267	55.36	3,815	4,154
Continental Air Lines	427,481	11,030	3,927	11,106	35.36	6,783	23,298
Delta Air Lines	988,961	38,114	17,688	29,395	60.17	46,599	104,875
Eastern Air Lines	4,249,531	163,293	86,493	143,093	60.45	285,269	601,964
Inland Air Lines	169,967	5,753	1,928	3,363	57.33	6,044	7,022
Mid-Continent Airlines	592,573	22,665	6,653	12,431	53.52	14,205	19,008
National Airlines	705,946	25,784	16,386	29,768	55.05	47,066	83,539
Northeast Airlines	246,096	17,675	3,320	7,579	43.81	6,506	9,617
Northwest Airlines	1,163,453	36,252	16,971	41,439	40.95	125,077	257,269
Transcontinental & Western Air	3,754,754	80,253	53,640	113,165	46.98	373,673	670,135
United Air Lines	3,520,231	123,394	71,799	124,972	57.45	493,208	1,473,726
Western Air Lines	443,817	18,849	6,791	14,556	46.65	18,521	37,460
Trunk total	23,146,263	867,600	420,147	781,172	53.78	2,015,002	5,582,507
Feeder Lines							
All American Airways	134,018	0	0	0	—	1,819	0
Challenger Airlines	125,835	2,523	702	2,738	25.64	7,543	8,809
Empire Air Lines	67,663	2,171	438	1,421	30.82	919	0
Florida Airways	61,783	941	130	500	26.00	239	0
Los Angeles Airways	24,215	0	0	0	—	0	3,019
Monarch Air Lines	124,686	1,471	389	2,244	17.34	918	4,508
Piedmont Aviation	198,738	3,807	809	4,173	19.39	1,775	1,803
Pioneer Air Lines	288,652	6,225	1,715	7,020	24.43	1,623	3,725
Robinson Airlines	60,356	2,669	398	1,267	31.41	0	892
Southwest Airways	178,090	6,402	1,182	3,740	31.60	2,030	5,354
Trans-Texas Airways	173,908	2,060	524	3,652	14.35	1,166	636
West Coast Airlines	82,891	2,943	376	1,741	21.60	509	0
Wisconsin-Central Airlines	93,695	1,080	159	721	22.05	1,034	0
Feeder total	1,614,530	32,292	6,822	29,217	23.35	19,575	25,727
Territorial Lines							
Caribbean-Atlantic Airlines	50,680	7,863	567	1,262	44.93	0	3,535
Hawaiian Airlines	199,880	22,576	3,108	4,468	69.56	9,992	33,982
Territorial total	250,560	30,439	3,675	5,730	64.14	9,992	37,517
Grand total	25,011,353	930,331	430,644	816,119	52.77	2,044,569	5,615,751
							3,246,336

Domestic Passenger-miles Flown (total revenue and non-revenue, in thousands):

	January	February	Total
Trunk lines	436,969	440,917	877,886
Feeder lines	6,714	7,545	14,259
Territorial lines	4,326	3,709	8,035
Total	448,009	452,171	900,180

MAY 15, 1949

John E. Sommers Named CAA Member of ANDB

John E. Sommers last month was named as CAA member of the Air Navigation Development Board by D. W. Rentzel, Administrator of Civil Aeronautics.

On the ANDB, he will serve with representatives of the Air Force, the Army and the Navy under Ralph S. Damon, Chairman of the Board, in planning and accomplishing the 15-year program of airways aids proposed by Special Committee No. 31 of the Radio Technical Commission for Aeronautics. The ANDB will "... formulate research on and development of aids for a common national system of air navigation and air traffic control to serve the needs of civilian and nontactical military aviation."

Bert A. Denicke, who has been serving as the acting CAA representative, will continue in the position to which he was originally appointed, Executive Secretary of the ANDB.

Mr. Sommers is one of a small group of aviation experts who started with the CAA's predecessor organization in 1927 when Federal airway matters were in the hands of the Bureau of Lighthouses of the Department of Commerce. He has served as airways extension superintendent, airport specialist, aeronautical inspector and engineer inspector. He became Regional Administrator of the First Region in New York in 1938, and was appointed Deputy Administrator of CAA in 1942. He served in this capacity, under Charles L. Stanton, during the war years.

Mr. Sommers learned to fly in 1918 when he served as an Ensign with the Navy. In 1945, he volunteered to go to Germany as civil aviation advisor to the Military Governor, returning in 1948 to his present post as Technical Assistant to the Administrator.

Statistics on Private Flying Given in CAA Publication

"Aircraft Use in 1947," the second in a series of annual reports being issued by the Civil Aeronautics Administration on the amount and type of private flying in the United States was published in April.

The report, prepared by the Research Division and the Office of Aviation Information, is based on a sample survey of aircraft owners conducted by mail and personal interview.

Copies of the publication are on sale at 30 cents each by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Regulations

OR-15 Effective March 24, 1949

Amends the Organization Regulations (formerly 14 CFR Part 301) so as to delegate authority in the handling of applications filed by Air Freight Forwarders for letters of registration.

Interpretation No. 1 of Part 41 CAR

Adopted March 23, 1949

This interprets the effect of CAR Amendment 41-1, dated October 5, 1948, regarding the number of flight radio operators required by certain types of operations. The complete text of the interpretation is given on page 58 of this issue of the CCA Journal.

Amendment 62-0 Effective May 1, 1949

This amendment establishes requirements for the notification and reporting of accidents involving civil aircraft in the United States, and aircraft of United States registry wherever they occur, and further establishes requirements for the notification of overdue aircraft.

Provision for the notification and reporting of accidents and for the removal, release, and preservation of aircraft wreckage formerly was made in Part I of the Civil Air Regulations. The Board said experience has shown that more accurate information and statistics, and better cooperation, is necessary if the work of the Board's Bureau of Safety Investigation is to be expedited.

Thus, while the new Part 62 in general continues the requirements already in force, it sets forth such requirements with greater specificity so that those persons required to give notice or submit reports will be better informed as to their responsibilities.

The new part also requires an operator to notify the Board of any aircraft which is overdue and unaccounted for, so that the appropriate governmental agencies may assist in the search for the aircraft.

Amendment 1-4 Effective May 1, 1949

Deletes § 1.3 of Part 1 of the Civil Air Regulations pertaining to the rules for reporting aircraft accidents, so as to clarify and expand them in a new Part 62.

Amdt. 60-4 Effective May 5, 1949

On April 15, 1948, the International Civil Aviation Organization (ICAO) adopted Annex 2, "Rules of the Air," as an international standard as provided in the Convention on International Civil Aviation. Adoption of this document was submitted to vote of the member states on the ICAO Council and was favored by more than the required two-thirds of such states. It was then submitted for the consideration of each of the member states of ICAO, none of whom signified disapproval of the document. Thus, by the terms of the Convention, Annex 2 came into force as an international standard on January 1, 1949.

In general, international standards set forth in ICAO Annex 2 are comparable to those of the Civil Air Regulations. However, there are a few provisions in Annex 2 which are not currently included in Part 60 which are found to be desirable for inclusion therein. Certain other provisions of Annex 2 were not deemed appropriate for adoption by the Board, and we have advised ICAO of our intention not to include such provisions in the Civil Air Regulations. Public notice of the differences in the Civil Air Regulations from Annex 2 has been given in the Federal Register. However, it will be noted that compliance with the provisions of Part 60 for operation of all aircraft except helicopters will constitute full compliance with the requirements of Annex 2.

This amendment of Part 60 includes the following changes:

1. The part is amended to make ICAO Annex 2 enforceable with respect to flights over the high seas, and a note is added advising the aviation public that in accordance with the provisions of Article 12 of the Convention on International Civil Aviation each contracting state has undertaken to make its regulations conform to the greatest possible extent to the ICAO provisions. Therefore, it may be expected that the provisions of Annex 2 will be generally applicable to flight over the territory of member states.

2. It is also considered desirable to add a note to Part 60 which will inform the aviation public that the international visual distress and urgency signals are contained in the CAA Flight Information Manual.

3. A third change is an amendment of § 60.301 adding a new paragraph which will require an IFR flight plan for international flights to give the number of persons on board.

4. Another change in Part 60 is an amendment of the current definition of "approach time" and a substitution thereof for the Annex 2 definition of "expected approach time." This amendment requires an editorial change in § 60.308 (b) where the term "expected approach time" is substituted for the current "approach time." The Annex 2 definition is a more logical one for the purpose for which it is used than the current term in the Civil Air Regulations.

The Board amends Part 60 of the Civil Air Regulations as follows:

1. By adding new § 60.001 to read as follows:

60.001 Operation over the high seas. Aircraft of United States registry operated in air commerce shall while over the high seas comply with the provisions of Annex 2 (Rules of the Air) to the Convention on International Civil Aviation.

NOTE: An airman who complies fully with Part 60 while over the high seas will also be in compliance with Annex 2. Under Article 12 of the Convention of International Civil Aviation, the member states undertake to make their regulations conform to the greatest possible extent to the ICAO Annexes. It may therefore be expected that the provisions of Annex 2 will be generally applicable to flight over the territory of member states of the International Civil Aviation Organization.

2. By adding a note under § 60.113 to read as follows: NOTE: International visual distress and urgency signals are contained in the CAA Flight Information Manual for sale by the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C.

3. By adding a new paragraph (n) to § 60.301 to read as follows:

(n) for international flights: the number of persons on board.

4. By amending paragraph (b) of § 60.308 to read as follows:

(b) proceed according to the latest air traffic clearance to the

radio facility serving the airport of intended landing, maintaining the minimum safe altitude or the last acknowledged assigned altitude whichever is higher. Descent shall start at the expected approach time last authorized or, if not received and acknowledged, at the estimated time of arrival indicated by the elapsed time specified in the flight plan.

5. By amending § 60.910 to read as follows:

60.910 Expected approach time. The time at which it is expected that an arriving aircraft will be cleared to commence approach for a landing.

ER-140 Effective March 28, 1949

§ 292.6 (e) (2) of the Economic Regulations requires prospective Air Freight Forwarders to submit financial statements showing assets and liabilities as of the date of their application for a Letter of Registration as an Air Freight Forwarder.

This has been found in practice to be an undue burden to most forwarder applicants. Ordinarily, they do not have such statements available, but nevertheless, are able to provide adequate statements as of the end of their last full fiscal year which is usually the preceding January or July 1st. The most recent of such statements are acceptable to the Board if such statements have been struck within a period of not to exceed 6 months preceding date of filing the application and will inform the Board satisfactorily concerning the financial status of most Air Freight Forwarder applicants.

Accordingly, § 292.6 (e) (2) item (B) is being amended to permit the submission of financial statements showing assets and liabilities as of the end of an applicant's latest fiscal year, but no earlier than a date 6 months prior to the date of filing the application.

In addition to this change, certain minor revisions and clarifications of the information required in an application are considered necessary and are being made at this time.

ER-140 amends § 292.6 of the Economic Regulations by amending items (2), (5), (8) and (10) and subparagraph (e) (2) to read as follows:

(e) Letters of Registration. * * * (2) Application for Letter of Registration. * * * "(2) name of air freight forwarder; * * *

(5) if a corporation, the state of incorporation, the name and citizenship of officers and directors, and a statement that at least 75 percent of the voting interest is owned or controlled by persons who are citizens of the United States or one of its possessions; * * *

(8) a financial statement showing assets and liabilities as of a date not exceeding 6 months prior to the date of filing the application; and a statement showing the types and amounts of insurance, which is in force for the protection of the forwarder's customers, and the public and the name or names of the insurers; * * *

(10) the information required in a "Report of Ownership of Stock" (CAB Form 2786; available from the Board's Publications Section) with respect to each officer and director, if a corporation or association; with respect to each partner or member, if a partnership; or with respect to the owner where the business is conducted by an individual; * * *

ER-141 Effective May 15, 1949

This amends § 224.1 of the Economic Regulations. § 224.1 (n) authorized the filing of rates or rules for application from and to points on new routes, and from and to new points on existing routes on not less than one day's notice. The Board's staff has found that more time is required to discharge its responsibilities in connection with the review of tariffs under Sec. 403 (a) of the Act. By notice of Proposed Rule Making (Draft Release No. 36-14 FR 383) the Board recently proposed that a filing of initial tariffs be made 30 days prior to their effective date instead of one day. The wording of the amendment of paragraph (n) hereto is identical to the revision heretofore proposed in 14 FR 383.

After receiving and reviewing comments on the proposed rule it has been determined that in addition to a 30-day filing requirement for initial tariffs, a provision in the regulations is desirable to authorize requests for special permission to file initial tariffs on shorter notice in special cases. Such authority would be comparable to the existing authorization to apply for special short notice filing permission with respect to changes in tariffs on less than 30 days' notice. Accordingly, paragraph (p) has also been amended to permit application for special short notice filing permission with respect to initial tariffs as well as revised tariffs. This amendment has not been proposed heretofore.

ER-142 Effective May 20, 1949

Amends its entirely § 292.1 of the Economic Regulations relating to irregular air carriers.

ER-143 Effective May 20, 1949

Section 292.4 of the Economic Regulations states the Board's requirements for applying for exemptions from the provisions of Title IV of the Civil Aeronautics Act of 1938, and the requirements of notice thereof to interested parties. The purpose of the present amendment is to relieve from the notice requirements of this section all large irregular carriers which file applications, prior to June 20, 1949, for individual exemptions for authority to engage in irregular air service other than between specified points. This is believed necessary since such applications will, by their very nature, involve indeterminate points, thus making it virtually impossible to fulfill the notice requirements of § 292.4 in its present form. The Board is prepared to give appropriate notice of such applications to such interested parties through its own facilities; consequently, interested persons will have notice of such applications, although not from applicants.

ER-143 amends § 292.4 of the Economic Regulations by amending paragraph (a) to read as follows:

(a) Notice of application. Prior to or coincident with the filing of any application for exemption from the requirements of Title IV of the Civil Aeronautics Act of 1938, as amended, or any provision thereof, or any rule, regulation, term, condition, or limitation prescribed thereunder, the applicant, unless otherwise authorized by the Board, shall cause a notice of such filing to be served by personal service or registered mail upon all persons who may have an interest in the subject matter of the application; provided, however, that any Large Irregular Carrier, as defined in § 292.1, filing such application for exemption prior to June 20, 1949, shall not be required to cause a notice of such filing to be served upon any of the persons having an interest

therein if such application requests exemption authority to engage in irregular air transportation other than between specified points. In the case of any application which proposes the furnishing or discontinuance of air transportation to or from any point, the following persons shall be presumed to have an interest in the subject matter of the application. * * *

CAR Revised Part 42 Effective June 1, 1949

Currently effective Part 42 provides rules for the operation of irregular air carriers which in many respects establish a comparable level of safety to that required for operations conducted by scheduled air carriers. Revised Part 42 is designed to provide a level of safety in irregular operations in transport-type aircraft which will be the equivalent of that required of the scheduled air carriers insofar as the inherent differences in such operations will permit. These requirements are the result of the consideration given to the application of Part 42 to irregular air carrier operations since the original promulgation of the part in 1946, the knowledge that the many irregular air carriers who have conducted operations at a high level of safety desire safety standards equivalent to those required of scheduled operators, and the Board's opinion that it is in the public interest to require all operators serving the public to perform their services with the highest possible degree of safety.

A more detailed statement of the basis and purpose of the part is contained in the Board's Explanatory Statement of Part 42 as follows:

When Part 42 of the Civil Air Regulations, which established nonscheduled air carrier certification and operation rules, was promulgated, the Board was cognizant of the fact that the application of these rules to nonscheduled operators should be kept under constant study and that changes in these rules would be required from time to time based upon operating experience. As a result of this continued consideration, substantial changes have already been made in Part 42 to raise the required minimum level of safety; for example additional provisions have since been promulgated relating to fire prevention, pilot qualification, aircraft maintenance, pilot flight time limitations, and weather minimums. These changes introduced requirements that were highly comparable with similar operating requirements for scheduled air carriers.

The last of the nonscheduled air carriers operating under the "grandfather clause" of § 42.45 has been inspected and granted an operating certificate by the Administrator. An examination of the records obtained in the certification process indicates that there are more than 2,600 nonscheduled operators, and that about 560 multiengined aircraft of similar types to those operated by scheduled carriers are being operated by about 140 of these carriers.

The standards presently established by Part 42 for these larger types of transport aircraft do not in all respects provide a comparable level of safety with the prescribed standards for scheduled operations. The revised part, therefore, is designed to establish such equivalent standards as the inherent differences in scheduled and nonscheduled operations permit. New requirements are set forth to insure comparable airman competency, aircraft equipment, maintenance, and operating limitations for passenger carrying.

After considering comments received in the rule-making process, the Board has raised, from 10,000 to 12,500 pounds, the weight which will distinguish between rules applicable to large aircraft and to small aircraft. There are a few aircraft in the range between 10,000 and 12,500 pounds whose operational and maintenance characteristics more closely correspond to those generally recognized as "small" aircraft than to the larger transport category type airplanes. Examination of pertinent irregular air carrier statistics indicates that fewer than a score of airplanes will be affected by the change.

The revised part will require an applicant for a certificate to own or have the exclusive use of at least one standard (NC) certificated aircraft, and no operator will be permitted to use a large aircraft (aircraft with a maximum certificated take-off weight of 12,500 pounds or more) for any type of service unless such aircraft has been found to be safe for the service to be offered and listed in the operating certificate. These provisions will enable the Administrator to re-examine all large aircraft to determine whether or not they are equipped and maintained in accordance with required standards, and will provide an administrative means for limiting transient use of aircraft so that the Administrator may be assured that maintenance and training required is satisfactorily provided for by the carrier.

In order to expedite the administrative problems under the part, it is required that each air carrier shall promptly notify the Administrator of any change in its principal business office and operations or maintenance base, and that the carrier shall keep copies of pertinent airman and maintenance records at its operations base.

For passenger operations under IFR conditions the part requires multiengined aircraft with specified performance characteristics and land aircraft operated over water beyond power-off gliding distance from shore are also required to be multiengined. These are the principal restrictions affecting operators of small aircraft. In addition, all aircraft are required to have installed a carburetor heater and carburetor temperature gauge for each engine when used under any conditions other than VFR day.

The part provides for a minimum flight altitude for day VFR operations of 500 feet above the surface and 1,000 feet from a mountain, hill, or other obstruction to flight, provided that there is a minimum ceiling of 1,000 feet. Previously, the minimum flight altitude was 1,000 feet. The effect of this rule is to prevent VFR flight when the ceiling is less than 1,500 feet. In view of operating experience since adoption of the requirement the Board believes that it imposes an impractical and unduly high requirement for many operations, especially those in small aircraft to which Part 42 is largely applicable. It is not believed that safety will be adversely affected by this change in minimum flight altitudes.

It will be noted that the flight time limitations currently in Part 42 have not been revised. The Board is currently considering new flight time limitations for all flight crew personnel, and expects to apply such requirements as it finds necessary, after affording due opportunity for public participation in the rule-making process, to all flight crew personnel utilized by air carriers and commercial operators. It will also be noted that current oxygen re-

(Continued on next page)

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CAB Official Actions

(Continued from page 56)

quirements are unchanged; revised requirements for all operators are currently being considered by the Board.

Part 45 Civil Air Regulations... Effective June 1, 1949

The Board issued the following explanatory statement in connection with new Part 45 of the Civil Air Regulations:

"The problem of safety regulation of non-common carrier carriage of goods and persons for compensation or hire has tended to become acute since the termination of the war and the release by the armed forces of surplus aircraft purchasable with limited funds. Moreover, with the promulgation today of more rigid safety requirements for air carriers engaging in irregular carriage of goods and persons, the pressure to avoid regulation by engaging or purporting to engage only in contract operations is expected to increase."

"Contract operations, especially those of large aircraft (i.e., aircraft of 12,500 pounds or more maximum certificated take-off weight), do not differ materially in their safety aspects from common carrier operations. However, at the present time, non-air carrier operations are governed by the provisions of Part 43 which part was designed primarily for the private operator of small aircraft (i.e., aircraft of less than 12,500 pounds maximum certificated take-off weight) rather than the commercial operator, and is, therefore, considerably less specific in its requirements. This is a situation which is bound to be deceptive to the average person utilizing the services of such an operator. It is a situation which the Board feels obligated to correct, especially in view of the fact that accident analysis indicates that imposition of higher safety standards together with the administrative means for enforcing such standards can make a positive contribution to air safety."

"Part 45 makes applicable to operators of aircraft certificated for a maximum take-off weight of 12,500 pounds or more the same requirements applicable to common carriers operating similar aircraft on other than a scheduled basis; these requirements, in turn, are similar to the operation of the scheduled carrier as the inherent differences in the nature of the two types of operations will permit. Such operators will be required to obtain an air agency certificate to be called a commercial operator certificate and to operate under the terms of such certificate. Until the Administrator has had an opportunity to inspect and issue such certificates, operators now engaged in operations subject to this part may continue without a certificate until January 1, 1950, provided that they make application therefor prior to June 1, 1949."

"Operators of small aircraft will be requested to observe the same rules applicable to common carriers utilizing the same type aircraft on other than a scheduled basis; they will not, under the part as now promulgated, have to obtain a certificate."

"The Board finds that the requirements established herein are the minimum necessary to provide adequately for safety in air commerce. The Board also finds that the interest of the public requires establishing provisions for the examination of, and the issuance of air agency certificates for, persons engaging in the non-common carriage of persons or property for compensation or hire in air commerce by civil aircraft of United States registry."

The new part is as follows:

PART 45—COMMERCIAL OPERATOR CERTIFICATION AND OPERATION RULES

45.1 Applicability of Part. The provisions of this part shall be applicable to citizens of the United States engaging in the carriage in air commerce of goods or passengers for compensation or hire, unless such carriage is conducted under the provisions of an air carrier operating certificate issued by the Administrator. For the purpose of this part, student instruction, banner towing, crop dusting, seeding, and similar operations shall not be considered as the carriage of goods or persons for compensation or hire.¹

45.2 Certificate required. No person subject to the provisions of this part shall engage in air commerce using aircraft of 12,500 lbs. or more certificated maximum take-off weight until he has obtained from the Administrator a commercial operator certificate: *Provided*, That any such person may engage in operations subject to the provisions of this part without a commercial operator certificate until such time as the Administrator shall pass on his application for such certificate, but in no case later than January 1, 1950, if he (1) is engaged in such operations on the date of adoption of this part and (2) has filed with the Administrator an application for such certificate not later than June 1, 1949.

45.3 Certification requirements. A commercial operator certificate shall be issued to an applicant who is capable of conducting his operations in accordance with the requirements of Part 42 as heretofore or hereafter amended, or at an equivalent level of safety.

45.4 Operating rules. All persons subject to the provisions of this part shall comply with the operating requirements of Part 42, as heretofore or hereafter amended, except that no person shall be required to comply with the provisions of § 42.12, fire prevention requirements, until January 1, 1950. Operating requirements shall be deemed to include requirements relating to aircraft and equipment, maintenance, flight crew, flight time limitations, flight operation, aircraft operating limitations, and related recording, keeping and reporting requirements.

45.5 Certificate rules. The certificate rules prescribed in §§ 42.3 through 42.9 shall be applicable to commercial operator certificates.

Safety Orders

S-231 revokes pilot certificate of George O. Smith for operating an aircraft at night without displaying position lights, at an altitude of less than 1000 feet over a congested area, while he was under the influence of intoxicating liquor (March 22).

S-232 revokes mechanic certificate of Paul A. Soucy for representing that he was authorized to conduct examinations and tests for mechanic certificates with A & E ratings, soliciting students to take practical examinations when not authorized to conduct such examinations and for unlawfully receiving and retaining fees for conducting such examinations (March 25).

¹ Under circumstances where it is doubtful whether the operations are for "compensation or hire," the test to be applied is whether the air carriage is merely incidental to the operator's other business or is, in and of itself, a major enterprise for profit.

Civil Aviation Highlights

Airports recorded with CAA, April 1, ...	1949	1948
By type: ¹	6,442	5,906
Commercial.....	2,866	2,919
Municipal.....	2,152	1,856
CAA intermediate.....	154	168
Military.....	389	447
All others.....	881	516
Civil airports by class:		
Total.....	6,053	5,459
Class I and under.....	(2)	3,666
Class II.....	(2)	859
Class III.....	(2)	432
Class IV.....	(2)	331
Class V.....	(2)	111
Class VI and over.....	(2)	60
Total U. S. civil aircraft, April 1,	94,027	97,681
Scheduled air carrier aircraft, April 1,	1,055	979
Civil aircraft production, Feb.:		
Total.....	257	461
2-place models.....	72	221
3-, 4- and 5-place models.....	154	226
Over 5-place.....	31	14
Certificates approved, Feb.:		
Student pilots.....	2,746	10,191
Private pilots.....	1,711	6,263
Commercial pilots.....	476	437
Airline transport pilots.....	56	65
Mechanics (original certificates).....	573	745
Ground instructors (original certificates).....	167	200
Flight instructor ratings.....	138	186
Flight navigators.....	17	-
Flight engineers.....	118	-
Flight radio operators.....	3	-
Instrument ratings.....	118	105
Control tower operators.....	161	122
Dispatchers.....	27	14
Traffic Control activity, Feb.:		
Aircraft operations, CAA airport towers.....	1,161,352	1,174,451
Fix postings, CAA airway centers.....	815,186	794,240

Airport Operations

Washington National, Mar.:		
Scheduled air carrier:		
Passengers departing.....	53,126	44,074
Passengers arriving.....	52,540	44,375
Aircraft arrivals and departures.....	10,643	8,750
Other aircraft arrivals and departures.....	4,772	3,317
San Francisco Municipal, Feb.:		
Scheduled air carrier:		
Passengers departing.....	32,417	25,553
Passengers arriving.....	31,808	28,325
Aircraft arrivals and departures.....	5,672	5,646
Other aircraft arrivals and departures.....	3,740	4,406
Oakland Municipal, Feb.:		
Scheduled air carrier:		
Passengers departing.....	4,035	3,688
Passengers arriving.....	3,554	5,375
Aircraft arrivals and departures.....	3,332	2,797
Other aircraft arrivals and departures.....	12,858	15,602
Los Angeles Municipal, Feb.:		
Scheduled air carrier:		
Passengers departing.....	37,477	(2)
Passengers arriving.....	37,665	(2)
Aircraft arrivals and departures.....	7,425	5,832
Other aircraft arrivals and departures.....	6,169	6,684
Miami International, Feb.:		
Scheduled air carrier:		
Passengers departing.....	56,234	49,551
Passengers arriving.....	56,251	50,142
Aircraft arrivals and departures.....	7,353	6,105
Other aircraft arrivals and departures.....	9,174	9,434

¹ Airport type definitions: Commercial—Public use and public services, privately owned and operated. Municipal—Public use and public services, municipally owned and/or operated. CAA Intermediate—Public emergency use, no services, CAA operated. Military—Public restricted, military operated. All others—(a) Public emergency use only, no public services, privately owned for personal use; (b) Public emergency use only, no public services Government-owned Forest Service, etc.

² Not available.

Experimental Fares Approved

The Civil Aeronautics Board on April 22 announced that it would permit certain promotional round-trip passenger fares, filed by Challenger Airlines Company and Monarch Air Lines, Inc. to become effective on April 24, 1949, and terminate July 31, 1949. Both applicants are feeder air carriers operating in the Rocky Mountain Region.

These fares, denominated "introductory educational" and "group" fares, respectively, provide substantial reductions, in one case, for travel solely between two consecutive points on the carriers' routes, and, in the other case, for travel in groups of various sizes, all members of the particular group being required to go and return on the same flight or on two consecutive flights.

New Rules to Simplify International Travel Are Adopted by ICAO

A major step in eliminating many of the formalities involved in crossing international boundaries by air was announced recently by the International Civil Aviation Organization. The step was the adoption by the Council, the executive body of ICAO, of a set of uniform rules to which the customs, immigration and related regulations of the 51 member States of ICAO are to be adjusted so far as they apply to international air transportation.

These new rules climax 3 years of studies and meetings by the Facilitation of International Air Transport Division and the Air Transport Committee of ICAO. The International Air Transport Association, representing the scheduled international airline operators, as well as Fédération Internationale des Transports Aériens Privés (non-scheduled carriers) and the Fédération Aéronautique Internationale (private flyers), cooperated and made suggestions concerning the development of these rules.

The new rules will make international air travel simpler by reducing the nations' entrance and exit requirements and by standardizing the number and content of forms required by authorities at point of entry airports. The rules take the form of international standards which each ICAO member state had undertaken to put into effect in its own territories. Their implementation is expected to cut down waiting time for air passengers on international routes, to eliminate much of the paper work that delays travelers and requires airlines to employ large clerical staffs. They are expected to have some effect eventually on the cost of air travel and of air cargo.

Standard Forms Proposed.—Conspicuous in the new regulations is a group of standard forms—passenger, crew and cargo manifests, embarkation-disembarkation cards, baggage declarations, etc.—plus limitations on the number of these forms which any ICAO state may demand of aircraft and of passengers landing in its territories. Included is a provision which would eliminate in-transit visa requirements for passengers arriving and departing on the same through flight and which would rule out the need for producing passenger and cargo manifests for customs and immigration authorities during such flights.

The embarkation-disembarkation card, which can be filled out by each passenger during flight, is designed to ban the many forms now used to obtain immigration control information from temporary visitors after arrival or before departure. Acceptance of this card will also eliminate the necessity for travellers having to obtain temporary entry permits and may lead to the further reciprocal elimination of entrance visas for temporary visitors.

To Cut Time on Ground.—The ICAO Facilitation Standards provide that national governments should not require such forms as certificates of good conduct and good health for purposes of entry, and that disinsection and other public health procedures should as much as possible be carried out during flight so that a further reduction in time spent on the ground will result.

Unless a majority of ICAO's 51 member nations disapproves the rules by next August 1, they will come into force on March 1, 1950. Should a nation be unable to comply in all respects, it must inform ICAO of the differences which will exist, and in turn the Organization must acquaint all other member states of these differences.

Interpretation of Amendment 41-1 On Flight Radio Operators Issued

The Civil Aeronautics Board has promulgated an interpretation of Part 41 of the Civil Air Regulations pursuant to § 205 (a) of the Civil Aeronautics Act, adopting the interpretation as part of the regulations. The purpose is to assist the Administrator, the air carriers, and the airmen affected in determining the effect of Civil Air Regulations Amendment 41-1, dated October 5, 1948, on the number of flight radio operators required for certain types of operations.

The interpretation is as follows:

"Minimum crew complement—Flight Radio Operators. We have been asked for an interpretation of the effect of Civil Air Regulations Amendment 41-1, dated October 5, 1948, on the minimum number of flight radio operators required on a scheduled flight of over 12 hours from airport to airport, where radio telegraphy is necessary for communication with ground stations over a route segment of the flight which is less than 12 hours in length.

"Section 41.312 of the Civil Air Regulations provides that 'when one flight radio operator is required the flight-time limitations prescribed in § 41.3041 apply. When two or more flight radio operators are required, the flight-time limitations of § 41.3042 apply.' Section 41.3041 states that where a crew consists of two pilots and an additional flight crew member, a 'pilot may not be scheduled to fly more than 12 hours during any 24 consecutive hours.' Since aircraft with which the regulation is concerned require two pilots at the controls at practically all times, the phrase 'scheduled to fly' as used in this section does not necessitate precise definition with respect to the flight time of pilots since they are on duty throughout the flight. However, the expression is ambiguous when applied to radio operators whose duty watch, from a safety standpoint, need not in all instances be continuous from airport to airport while the aircraft is in the air. As applied to such airmen the term 'to fly' when used as part of the phrase 'scheduled to fly,' may be interpreted in two possible ways—it may mean the entire time the aircraft is in the air, or it may mean the time the radio operator is on flight duty on the aircraft.

"In dealing with this problem it is necessary to bear in mind that the Board's power over maximum hours of service of airmen derives from section 601 (a) of the Civil Aeronautics Act and relates solely to promoting safety of flight in air commerce. It is evident that the Board does not consider that an airmen's being in the air for more than 12 hours creates a hazardous condition in and of itself, for exactly such a situation is contemplated in § 41.3042 with respect to pilots. In effect, what is required by that section is that when the flight is to be of more than 12 hours' duration, provision be made for a relief pilot to permit the captain and first officer to be relieved from time to time of the strain of a continuous flight watch. The same principle is applicable to radio operators. Where the radio operator's flight watch is scheduled for more than 12 hours in a given 24, it is apparent that a second operator must be carried to relieve the first. However, what is essential is that after 12 hours of duty the radio operator be relieved, not that he be relieved by another operator, and consequently, if such relief is afforded by reason of the fact that the radio operator's services are not required for the operation of the aircraft for more than 12 hours, the same safety standard would appear to have been met.

"Prior to the adoption of Amendment 41-1 on October 5, 1948, which specifically defined what was intended by 'route segment,' it may not have been clear in all cases when a radio operator was required to be on flight duty under the regulation. However, since the adoption of § 41.99 (q), the Administrator is permitted to specify the exact limits of a route

segment, which may be considerably more confined than the route between the airports of take-off and landing for the flight. Thus, under the regulations, the time scheduled over the route segment or segments for which the Administrator has determined radio telegraphy is necessary represents the minimum on-duty time for which a flight radio operator is required. If the air carrier desires to maintain a radio flight watch beyond the minimum time thus prescribed or to utilize the services of the airmen in some other certificated capacity on the flight, of course, the time so spent must be included as part of the airmen's on-duty flight time.

"Accordingly, we interpret 'scheduled to fly' as used in § 41.3041 and as applied to radio operators as meaning 'scheduled for flight duty on the aircraft.' Thus, only one flight radio operator is required on a scheduled flight of over 12 hours from airport to airport where such operator is only required or assigned for duty as an airmen over a route segment which is less than 12 hours in length."

Airframe Weight Shipments 777,700 Pounds in February

Airframe weight of civil aircraft shipped during February was 777,700 pounds. This was more than $\frac{1}{2}$ times the airframe weight shipped in January, which established a postwar low in civil airframe production.

February civil shipments totaled 257 aircraft compared to 160 in January. Shipments included 31 civil transports, the largest monthly transport figure since June 1948, when 33 were shipped.

Shipments of civil aircraft engines were 469 in February, highest since August 1948. Total horsepower of civil engines in February was 141,700 compared to 112,400 in January.

February civil aircraft shipments were as follows:

Civil Aircraft Shipments February-January 1949

	Number of Units		Airframe Weight (000)	
	Februa- ry	Janu- ary	Februa- ry	Janu- ary
Total	257	160	777.7	280.7
By type:				
Personal	226	151	186.2	136.1
Transport	31	9	591.5	144.6
By number of places:				
2-place	72	37	40.2	20.6
3- to 5-place	154	114	146.0	115.5
Over 5-place	31	9	591.5	144.6

Booklet Gives Weather Information

"Realm of Flight" is the title of a Civil Aeronautics Administration publication which presents practical information about the effect of atmospheric conditions upon flight. It contains descriptive illustrations in colors and was prepared primarily for the assistance of the private pilot. The publication is on sale at 60 cents per copy by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Higher Rates Proposed As Board Issues Orders In Two Air Mail Cases

In final mail rate show cause orders issued April 20 the Civil Aeronautics Board proposed increased rates of pay for the transportation of mail for the 3-year period January 1, 1946, to December 31, 1948, for the trans-Atlantic routes of Pan American Airways, and for American Overseas Airlines, over its entire system.

For Pan American the Board proposed a new rate of 83.1 cents per revenue plane mile for the 3-year period as compared to the old temporary rate of 60 cents per revenue plane mile, which was based on a daily designated mileage of 31,200 and which actually yielded 40 cents per revenue plane mile. Under the new rate the total payment to the carrier for the 3-year period will be \$24,635,000, of which \$11,852,000 has already been paid under the old temporary rate. Thus Pan American, the largest of the American-flag carriers, will receive a lump sum payment of \$12,783,000 as the balance due under the new rate for the 3-year period.

For American Overseas the Board proposed a new rate of 53.5 cents per revenue plane mile for the 3-year period as compared to the old temporary rate of 60 cents per revenue plane mile which was based on the daily designated mileage of 20,600, which actually yielded 41.1 cents per revenue plane mile. Under the new rate the total payment to AOA for the 3-year period will be \$10,146,000, of which AOA has already received \$7,800,000 under the old temporary rate. Under the proposed new rate AOA will receive a lump sum payment of \$2,346,000 as the balance due for the subject period.

To Defer Action on New Rate.—The Board announced that it would defer action on issuing a new rate for the period on and after January 1, 1949, until it had time to reevaluate the operations of the trans-Atlantic carriers. In the meantime, the present temporary rates will remain in effect, the Board said.

The Board revealed that the operations of the trans-Atlantic air carriers to date, and the air carriers' estimates for the future, all pointed up an increasing dependency upon governmental support, which had occurred in spite of the phenomenal expansion in both traffic volume and capacity operated, and which would normally be taken as indicative of increased business success and prosperity. Unfortunately, the financial operating results and consequent mail pay requirements have reflected a very different picture, the Board said.

Protection of Public Sought.—The Board pointed out that its responsibility under the Civil Aeronautics Act extends not merely to the development of air transportation, but also in equal measure to the protection of the public from over-expansion of the industry. In the light of the discouraging trends in the North Atlantic operations, it is incumbent upon the Board to take vigorous action to protect the public against continued mounting expenditures in support of uneconomical expansion. It is necessary that the objectives of the Act be implemented by administrative decisions which will define the limitations of expenditures which reasonably may be borne by the public and yet provide adequate support of the development of civil aviation in accordance with the objectives of the Act, the Board stated.

The Board added that it was of the opinion that the sound development of air transportation must essentially lead to decreased government support with the expansion of the industry.

Chairman O'Connell Views Outlook for 1949 In Statement on Civil Aviation to Committee

(Continued from page 49)

and domestic commerce, and our national defense," he said.

Financial Strength Suffered.—The financial and economic strength of the industry declined prior to passage of the Act, he said, in a period which he said was marked by "cut-throat competition" and "unfair practices" during which the financial strength of the carriers suffered and the credit position of the industry as a whole "deteriorated to such an extent as to threaten seriously the continued development of air transportation."

He then cited the growth of the system since 1938. "Most of this growth has taken place in the 3½ years since the war," he said. "To cite only a few examples, during 1938, 240 communities were authorized for service by the domestic route pattern; by September of 1948, 748 communities had been authorized. In 1938 approximately 70,000,000 plane miles were flown in domestic service. This figure had grown to 340,000,000 plane miles by 1948 and the increase in the capacity for passenger-miles and ton miles of traffic had been far greater. Passenger miles increased from one-half to 6 billion passenger miles in the 11-year period. Mail increased from 7½ million ton miles to 38 million ton miles, while the increase in freight and express traffic was forty-fold for the certified carriers. The increase in total traffic for 1948 was 1,160 percent over 1938, 330 percent over 1941, and 70 percent over 1945."

Three Developments Significant.—Expansion of airline operations since the war in the domestic field has been marked by three significant developments, he said, pointing out that a substantial number of feeder or local operations have been certificated, competition has increased, and the carriers have placed in service larger and faster equipment. The Board has now certificated 21 local and feeder carriers for a 3-year experimental period, he said. Eleven of these are now in operation. The certificate of one, Florida Airlines, expired on March 28 and was not renewed.

He said that it was the feeling of the Board that local carriers are in a better position to furnish feeder service than the larger carriers. This view has been borne out by experience, he said. "These local companies have demonstrated a considerable degree of initiative in adapting their operations to local conditions and in stimulating local traffic," he declared.

The Board has "no hard and fast rule" which will be applied in deciding whether certificates of the feeder lines will be extended, he said. "Certain general policies and principles which we believe must be followed are that the local carriers should not be competitive, either with each other or with domestic trunk routes; that they should provide an essentially local service, either between small local points or, alternatively, between small local points and major traffic centers; and, finally that communities, or even entire route segments, of feeder carriers which show very light traffic loads should be abandoned," he continued.

Additional Experimental Period.—"We will attempt to perpetuate, at least for an additional experimental period, feeder carriers in areas where the public service is commensurate with the cost to the government. It would be wrong to imply, however, that feeder airline service will be able to support itself in the foreseeable future.

"We believe, however, that with due care on our part and on the part of the feeder management, the cost of providing this service to the smaller communities can be kept within reasonable bounds and will be worth the expenditures which will be required of the government.

"What has been said of the smaller communities

served by the feeders is equally applicable to the smaller points recently certificated to the trunk lines. There can be no doubt that if these communities were eliminated there would be a sharp drop in the dependence of these carriers on the government."

A substantial amount of increased competitive mileage has been awarded by the Board since the war, the Chairman said.

"It is important to remember the atmosphere in which the post-war competitive routes were granted," he continued. "At the time, passenger travel promised to increase almost indefinitely and freight traffic, a new field, was to add tremendously to potential airline traffic. Opportunities for growth according to the statements and briefs of the carriers, and others including the government, were only exceeded by the opportunities for profit. It is not surprising that much of this optimism became a part of the record in new route cases before the Board and that the Board necessarily confined to that record, found full justification for the institution of additional competition."

Corrective Action Undertaken.—"The institution of competition may have been carried too far in certain instances," he added, "but corrective action is now being undertaken to bring about a sounder and more realistic competitive relationship between the carriers."

The increase in the cost of airline service to the travelling public has not kept pace with the increase of prices in general since the war, the Chairman said.

"Over a short range we believe that the carriers should attempt to attract as much new traffic as possible through the use of promotional and developmental fares utilizing space on aircraft which now are only partially filled," he continued. "In the long run our policy with respect to passenger fares is to have them, at as low a level as possible, consistent with the cost of the service. With the new equipment now coming into service, with the gradual shakedown of the carriers' personnel and organizations, we believe that reasonably compensatory passenger fares should be achieved by the carriers in the not too distant future, unless, of course, there is a serious economic depression or a recession which would have a drastic effect upon all classes of travel. If this policy can be successfully pursued, the airlines should, over the course of the next few years, become less dependent upon the government for support and at the same time should be capable of maintaining a volume of passenger traffic which will stand in reasonable relationship to the present capacity of the airline industry."

Service Increase Boosts Pay.—"The increase in mail pay since the prewar years is primarily a reflection of increased air service, the Chairman said.

"Last year the airmail pay bill for our domestic trunk, feeder and international carriers amounted to approximately \$102 million," he said. "This figure is subject to upward adjustment. In the current year the bill will be higher, perhaps as high as \$125 million. I hasten to all that neither of these sums represents subsidy. Rather, a substantial portion represents payments which would have to be made by the Post Office for the carriage of the mail regardless of the subsidy provisions of the Act, just as the Post Office pays surface carriers for the carriage of mail.

"There is no blinking the fact that most of the carriers are now receiving a subsidy in that they receive mail pay in amounts that do not bear any necessary relation to the cost of handling mail actually carried. It may be well to point out, however, that provided the carrier's management is honest, economical and efficient, the payment by the government of the amount necessary to meet the needs of the car-

CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board. Both offices are located in the Department of Commerce Building, Washington 25, D. C.

Administration

John Sommers Named CAA Member of Air Navigation Board (April 7).

ECA Sends 13 CAA Aviation Officials on Mission to Greece (April 13).

National Airport Plan for 1949 Announced by CAA (April 15).

Hensley Appointed Director, Aviation Safety, Succeeding Marriott, CAA Head Announces (April 25).

Statement of D. W. Rentzel, Administrator of Civil Aeronautics, before Senate Committee on Interstate and Foreign Commerce, entitled, "America's Air Navigation Program" (April 15).

Address by D. W. Rentzel, Administrator of Civil Aeronautics, at Flying Farmer's Conference, entitled, "Partners in Agriculture—The Pilot and the Farmer," Kansas City, Missouri (April 21).

Address by D. W. Rentzel, Administrator of Civil Aeronautics, before American Association of Airport Executives, entitled, "The New Air Navigation Program," Hotel Biltmore, Oklahoma City (April 25).

Board

Air Transportation Record (CAB 49-22) (March 24).

CAB Renews TACA's Permit for San Salvador-New Orleans Air Service (CAB 49-23) (April 1).

CAB Takes Action on Three Feeder Airlines (CAB 49-24) (April 4).

Canadian Pacific Air Lines, Ltd., Granted Permit for Air Service Between Whitehorse and Fairbanks (CAB 49-25) (April 4).

Mileage and Traffic Statistics for January 1949 (CAB 49-26) (April 11).

CAB Issues New Regulations for Irregular Air Carriers (CAB 49-27) (April 18).

Mail Rates Proposed for Pan American Airways and American Overseas Airlines Trans-Atlantic Operations (CAB 49-28) (April 20).

Experimental Fares for Two Feeder Air Carriers (CAB 49-29) (April 22).

rier and to furnish it with a return on its investment is not a subsidy to the carrier. Rather it is a subsidy to the persons who use the air service."

He said there had been criticism of the Board's mail rate practices and policies because "we have never defined with sufficient clarity and never made adequate findings as to whether the carriers, or an individual carrier, were 'honest and economical and efficient' as defined in Section 406 (b) of the Civil Aeronautics Act.

"Actually we attempt in each mail rate case before us to come to a conclusion as to whether a carrier has or has not been operated under conditions of honest, economical and efficient management," he said. Disallowances in certain recent mail rate cases have been substantial, he continued, adding that the reductions in these cases had been "so substantial as to lead to the conclusion that the carrier's management was uneconomical and inefficient at least for a particular period or in a particular cost category."

Aircraft Are Listed by Counties

A list of civil aircraft by states and counties within states as of January 1, 1949, and January 1, 1948, has been compiled by the Civil Aeronautics Administration and is available upon request to the Office of Aviation Information, CAA, Department of Commerce, Washington 25, D. C.

New Rules for Irregular Carriers Provide Closer Board Supervision

The Civil Aeronautics Board on April 18 issued new regulations for irregular air carriers, and proposed additional regulations, designed to bring the operations of this type of air carrier under closer supervision of the Board.

In a statement accompanying the revision of Section 292.1 of the Economic Regulations, which was adopted with an effective date of May 20, 1949, the Board said that experience had demonstrated the need for such revision. It stated that "although a substantial number of large irregular carriers have attempted to comply with the regulation, * * * (it) has served as a cloak for operations which are not within the intent and purpose of the regulation * * *. The temptation on the part of the large irregular carrier which has no other means of livelihood, to violate the regulation is very great, because such carrier tends for economic reasons to gravitate to the more lucrative routes and to operate with increasing regularity thereon in order to obtain full utilization of large aircraft."

Blanket Exemption Terminated.—One of the major changes effectuated by the new regulation is termination of the existing blanket exemption for large irregular air carriers. The new regulation provides that each large irregular carrier, in order to continue its operations, must file with the Board within 30 days from the effective date of the regulation an application for an individual exemption from certain provisions of the Civil Aeronautics Act. The carrier may then continue to operate while the Board is considering its application.

Instructions are to be issued shortly on the proper form and content of the applications for individual exemptions. The aim will be to have each application set forth the precise scope of the operating authority requested. Relevant material contained in reports already on file with the Board will be treated as part of the application, and voluminous supporting material need not accompany the applications when filed. Except for continued failure to comply with reporting requirements under the regulation by the applicants, no application will be denied by the Board because of deficiency of supporting factual data, without first affording the applicant opportunity to supplement its application.

Notice Requirement Eliminated.—The amendment of § 292.4, concurrently adopted with the revision of 292.1 has eliminated in the case of irregular carriers the requirement of serving upon interested persons notice of any application for an exemption, a requirement they would find impossible to meet where the exemption relates to service between indeterminate points.

The Board found that the public interest required that permission to use large aircraft in irregular air service be granted only in cases in which "(a) it is demonstrated that a need for irregular air service exists and will be met by the use of such aircraft, and (b) the Board can define the scope of the carrier's authority with more particularity than is possible under a blanket exemption authority."

It was also pointed out that one of the factors which the Board would take into consideration in disposing of applications for exemption is the extent to which the applicant has engaged in regular operation or has otherwise failed to comply with the requirements of the Act and the Board's regulations. In orders approving any individual exemption, the Board said, it would expect to insert appropriate conditions as to the term of the exemption and the nature of the services, and to define areas within which such services may be furnished, as well as apply other appropriate conditions intended to "confine the carrier to the rendition of an irregular service."

Previous Exemption Withdrawn.—The new regulation also withdraws the previous exemption of large

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Industrial Fliers Told Code of Ethics Vital To Future of Business

"If industrial flying is to become an accepted business, it must adopt for the regulation of its conduct a standard of ethics," D. W. Rentzel, Administrator of Civil Aeronautics, told farmers and pilots attending a conference of "Flying Farmers" at Kansas City April 21.

"A man can get out of this business faster than he can get in," Mr. Rentzel said, referring to certain difficulties in the use of weed-killing chemicals which also kill some valuable crops. "I can't say that I blame a farmer for resorting to the shotgun or the lawsuit when a crop he has labored over is injured by some careless pilot in an airplane."

The Administrator said the CAA prefers to "educate, advise and cooperate" with airmen in this new business, rather than regulate, but he pointed out that laws regulating the application of chemicals from the air already are on the books in some states and proposed in others. As in any other profession, he said, the policing should be done by the members themselves, rather than by government.

Increased Plane Use Likely.—Prospects for increasing use of the airplane in agriculture are bright, he said, with chemical companies expecting an increase over last year of at least 50 percent. Only the prospect of a general business recession, he said, restrains these companies from forecasting great volume increase over the 10,000,000 pounds of weed killer which was applied last year. New chemicals, some of which show promise of killing the mesquite and woody shrubs which infest western cattle ranges, are almost ready for commercial use, he said, and others are under development which will control the Johnson grass and crab grass that infest cotton fields.

Praising the Department of Agriculture for the work it has done in the adaptation of the airplane to agriculture uses, Mr. Rentzel announced that promotion of this kind of industrial flying will be a major part of the activity to be conducted by the new Office of Aviation Development now being formed in the CAA.

He explained how agricultural experts expect the flier soon should be assisting the cotton grower. "Early in the cotton plant's life," the administrator said, "a flame weeder might be used on young crab grass. The flame will not kill the cotton plant, but it gets most of the grass. Next, if weeds and grass persist, a chemical can be sprayed, in many cases most economically from the air. The cotton would be cultivated at least once, and then a defoliant applied at the right time, also from the air where conditions permit. When the leaves have fallen off, the mechanical cotton picker's job is simplified."

Other Jobs for Planes Stressed.—Two other jobs for the airplane need stressing, he added, listing these as the control of forest, cotton and other crop pests and disease-carrying insects. "In the control of insects that cause discomfort and diseases in humans and other animals, the airplane is growing in importance," he declared.

"This is a fertile field for the aircraft operator. The spread of malaria—and we have serious malaria conditions in this country despite our high public health standards—can be stopped in a matter of minutes by spraying from the air."

The heaviest infestation of grasshoppers in 10 years is expected in 1949, he said, if conditions are not abnormal. "Killing these pests is great work for the airman," he continued. "By scattering bran flakes treated with poison the airman can stop a grasshopper army in its tracks."

Statistical Study of Aircraft Given in CAA Publication

The results of a statistical study made by the Civil Aeronautics Administration Aviation Statistics Service of the 95,997 United States civil aircraft on record with the Administration on January 1, 1949, is contained in a recent CAA publication entitled "Statistical Study of U. S. Civil Aircraft as of January 1, 1949."

The publication may be obtained upon request to the Office of Aviation Information, CAA, Department of Commerce, Washington 25, D. C.

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